



Reading the Willey Disaster: An Evolutionary Approach to Environmental Aesthetics in Cole's *Notch of the White Mountains* and Hawthorne's "The Ambitious Guest"

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Abstract

Inspired by the Willey Disaster of 1826, a landslide in the White Mountains that killed an entire family living in Crawford Notch, both Nathaniel Hawthorne and Thomas Cole produced works of art commemorating the event. Hawthorne's story "The Ambitious Guest" and Cole's painting The Notch of the White Mountains are usually read in light of their cultural significance, most often as contributions to a nationalist aesthetic that sought to celebrate American landscapes—and the history and legends associated with them—as the basis for distinctly American art forms. But applying ideas about the evolutionary basis for environmental preferences, as described in articles by Gordon Orians and Judith Heerwagen and Stephen Kaplan, gives us a different way to account for the lasting appeal of these classic works of landscape art and environmental literature. Recognizing the importance of habitat selection to any species, Orians and Heerwagen outline the "savanna hypothesis," "prospect-refuge theory," and the temporal and spatial frames of reference as they account for our intuitive and subconscious preference for certain landscapes. Kaplan describes a four-part "preference model," discussing the appeals of coherence, complexity, legibility, and mystery in determining our landscape preferences. Together, their analyses demonstrate why we are drawn to landscapes which offer both access to resources and protection from predators, which allow us to see without being seen, and which offer the promise of successful inhabitation. Successful artists and writers like Cole and Hawthorne know how to appeal to these innate, genetically-imprinted preferences for certain kinds of environments. Landscape art, then, in all its forms, succeeds not only by invoking cultural themes and influences but by appealing to human nature.

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In an essay entitled “Evolved Responses to Landscapes,” Gordon Orians and Judith Heerwagen make the case that “an evolutionary-adaptive approach to environmental aesthetics . . . can enrich studies from a variety of perspectives and in a wide range of topics” (575). They suggest the pertinence of their ideas to landscape art and architecture, outlining the ways in which our preferences for certain landscapes reveal adaptations developed over the course of human evolution in the Pleistocene. For example, the “savanna hypothesis” suggests that our preference as a species would be for landscapes resembling our ancestral home in the African savanna, with an intermediate level of openness interspersed with trees for shelter, and abundant resources (like food and water) conveniently located from ground level to about six feet above ground (or within human reach). Stephen Kaplan expands on these ideas, outlining a “preference model” that suggests that ideal landscapes for humans would blend the appeals of coherence, complexity, legibility, and mystery. The evolutionary approach to environmental aesthetics suggests that there is a biological basis for our responses not just to natural environments that we encounter, but to landscape depictions in art or landscape manipulations in architecture. We can further surmise that artists and architects—and I’d add writers to the mix—take advantage of our innate responses in the landscapes they create. And yet literary ecocritics have as yet made little use of ideas from evolutionary psychology. In an article which makes reference to the articles by Kaplan and Orians and Heerwagen, Nancy Easterlin argues that evolutionary psychology is “indispensable to understanding human attitudes to physical environments” and so ought to be “crucial to ecocriticism’s theoretical foundation”—a foundation, she contends, that has heretofore been lacking (2,5).¹ As a test case for these ideas, I offer here an analysis of two works of art that emerged in the aftermath of the Willey disaster of 1826, when a landslide wiped out a family living in Crawford Notch in the White Mountains. The incident has been the subject of or inspiration for several works of art, most famously (if somewhat indirectly) Thomas Cole’s 1839 painting *Notch of the White Mountains* (figure 1) and Nathaniel Hawthorne’s 1835 short story “The Ambitious Guest.”

The Willey Disaster took place on August 28, 1826, when, after a summer of drought had cracked the mountain soil, a thunderstorm loosed mudslides from the steep slopes of what is now called Mount Willey, on the west side of the Notch, facing the cliffs of Mount Webster on the eastern side. The irony of the event was that the house itself was unharmed, as a ledge above the house diverted the mudslide into two streams that bypassed the Willey house on either side. But the family members had left the house, perhaps to escape the rising flood waters of the Saco River, which runs through the Notch, or, as the Hawthorne story has it, to seek shelter elsewhere. If they’d stayed put, they all would have survived. As John Sears notes in an essay on Hawthorne’s story, the Willey Disaster quickly became “not just news, but a cultural event” (354). A further irony is that just two months earlier the family had survived a similar mudslide that came down Mt. Webster on the opposite side of the Notch. The Disaster inspired paintings of Crawford Notch by artists besides Cole, such as Henry Pratt (1828) and Thomas Hill (1867), and it was the subject of a poem by Lydia Sigourney and an account in Theodore Dwight’s *Scenery and Manners in the United States* (1829). It also very quickly became the subject of numerous sermons, as ministers sought to explain the apparently paradoxical workings of Providence, clearly beyond the ken of mere mortals.



Figure 1: Thomas Cole, *Notch of the White Mountain*, 1839.

While perhaps overstating the significance of one event's contributions to changing landscape aesthetics, Eric Purchase makes the largest claims for the significance of the Willey Disaster, saying it "challenged fundamental beliefs about the relationship between humans and the natural landscape" and "initiated a new order of consciousness about landscape in America" (13, 69). In the Puritan view, says Purchase, "the material universe corroborated traditional moral values," with natural disasters read as the workings of Providence. So too would the early nineteenth-century Transcendentalists read the landscape as a more wide-ranging set of symbolic values. But the Slide suggested that the natural world could be irrational and frightening, and that it "lacked moral content" (Purchase 70-71). At the same time, of course, a view of the inscrutable power of the landscape paved the way (so to speak) for the importation of the aesthetics of the sublime. And thus began a tourist boom that began in the White Mountains but that extended to other wilderness areas as well. For the first time, says Purchase, "the aesthetic appreciation of mountain scenery by wealthy travelers would make the White Mountain landscape valuable," such that "Land . . . now became an object of business, a commodity in its own right" (26).

Among the influx of travelers to the scene of the Willey Disaster were artists and writers, among them Thomas Cole in 1827 and 1828, and then again in 1839, and Nathaniel Hawthorne in 1832. Hawthorne's stay in the Whites prompted two portions of his 1835 "Sketches from Memory," "The Notch of the White Mountains" and "Our Evening Party among the Mountains." Not long after followed three White Mountain stories, first "The Ambitious Guest" (1835), specifically about the Willey Disaster, and later "The Great Carbuncle" (1836) and "The Great Stone Face" (1850), recounting other legends of the

mountains. Cole was similarly inspired. In 1827 he painted *View in the White Mountains*, and in 1828 *Distant View of the Slides That Destroyed the Willey Family, the White Mountains*. The latter is unfortunately lost to us, but we do have a lithograph of it by Anthony Imbert. It depicts a landscape of sheer devastation, with the only hint of human presence a piece of road in the foreground that is buried under tangles of uprooted trees and boulders. The house itself is not shown, but Mt. Willey looms in the background, with scars visible where the landslides sheared swaths of forest off the slopes. His 1839 *A View of the Mountain Pass Called the Notch of the White Mountains* resulted from his stay at Thomas Crawford's inn just to the north of the Gate of the Notch. While it is not set on the actual site of the Willey Disaster (which is just south of the Gate), many commentators have assumed that it is intended as a depiction of the site of the Willey Disaster, or is at least meant to invoke it as "a before-the-fact reference to this infamous event," as Annie Proulx puts it. The National Gallery's collection notes point out the painting's "oblique reference to a specific historical event" and suggest that Hawthorne's story may have sparked Cole's interest in the site.

The cultural impacts that followed from the Willey Disaster are surely responsible for much of the attention that has been devoted to the disaster itself and to Hawthorne's story and Cole's painting. Sears, for instance, reads Hawthorne's story in light of a variety of cultural contexts: the puritan tradition of "curiosity about Providential happenings," the contemporary desire of literary nationalists "to furnish American places with legend," and the aesthetics of the sublime and its "passion for catastrophe . . . and the love of ruins" (360). These are likely impetuses behind Cole's *Notch of the White Mountains* as well. Hawthorne also stresses, notes Sears, the domesticity of the "cult of Home," suggesting that modesty and humility rather than great ambition should be the way of American democracy (362). But especially because the cultural significances are so apparent, it becomes all the more interesting to consider the ways in which these cultural appeals also rely on evolved responses to landscapes. While cultural meanings abound in both Hawthorne's story and Cole's painting, there's also a great deal about human nature to be read there—human nature as it is expressed in terms of evolved landscape preferences.

Orians and Heerwagen point out that our landscape preferences tend to express themselves in immediate emotional responses to an environment, and that those subconscious responses reflect genetically imprinted preferences for habitats that provide both access to resources and protection from predators and hazards. Those responses are genetically imprinted, in our species and others, because of the importance of proper habitat selection. In truth Hawthorne's story seems to focus on the bleakness of the landscape, and while that might serve as effective foreshadowing for the disaster that we (and Hawthorne's contemporary readers) all know is coming, James Mellow considers it an artistic flaw: "the ominous note of impending tragedy is too insistently sounded from the beginning" (52). One might also wonder why any human beings would choose such an uninviting spot for hearth and home—and why readers would respond to such a dreary description of an environment clearly unsuited for human habitation. But in fact, Hawthorne also embeds in the tale lots of information about resource availability in the area. The first line of the story describes a fire in the hearth "piled . . . high with the driftwood of mountain streams, the dry cones of the pines, and the splintered ruins of great trees that had come crashing down the precipice" (324). So there is firewood aplenty in the area—later in the story the family toss "pine branches on their fire" in order "to chase away the gloom" (331). The availability of firewood might have been especially appealing to readers when the deforestation of New England was well underway a third of the way through the nineteenth century; in a little over two decades after the publication of Hawthorne's story, in 1857, Thoreau would be complaining about the

depletion of New England's forests in his lecture "The Wild," which became the final section of his posthumously published essay "Walking."

Other resources are also found readily at hand in the setting of Hawthorne's story. The family serves the "ambitious guest" a "supper of bear's meat," and at one point the youngest child suggests that they all leave the house to "go and take a drink out of the basin of the Flume," a couple of miles to the north, so there is food and water to be found nearby as well (326, 329). Of course the greatest attraction of the habitat the family has selected is that it is conveniently located on the only road through the pass, and so is a source of paying customers: "The romantic pass of the Notch is a great artery," says Hawthorne, "through which the life-blood of internal commerce is continually throbbing between Maine, on one side, and the Green Mountains and the shores of the St. Lawrence, on the other" (325). Even on a stormy night—especially on a stormy night—the location of the family's home is such that travelers are funneled to their door. The place, then, is not without its attractions, at least in terms of resource availability. As readers, then, we may not only understand why the Willey family would have chosen to live in such a spot, we may also grasp the attractions of the place ourselves. Hawthorne, then, would be relying (not consciously, of course) on our landscape preferences to justify his plot and to build the appeal of his story.

But still, despite these few descriptions that suggest the availability of resources at the Willey homestead, the overwhelming emphasis is on the potential for danger in the setting. We are told that "the wind was sharp throughout the year, and pitilessly cold in the winter," and that "they dwelt in a cold spot and a dangerous one; for a mountain towered above their heads, so steep, that the stones would often rumble down its sides and startle them at midnight" (324). One way to read these ominous notes is as a warning about inadequately considered habitat selection. While the area has accessible resources—that's good—it doesn't provide protection from hazards. After the ambitious guest has expressed his vague sense that he is intended for some future glory, the father of the family engages in his own wishful thinking, and he finds himself "wishing we had a good farm in Bartlett . . . or some other township round the White Mountains; but not where they could tumble on our heads" (329). Something deep inside (that would be his genes speaking) is telling him that perhaps a more suitable habitat would be preferable to their current situation.

Of course the bleak descriptions of the landscape are also recognizable as the aesthetics of the sublime, which would seem to be a product of cultural rather than biological forces. But maybe not completely. The sublime features the vast and precipitous and powerful sites of the natural world, apprehended and appreciated with a mixture of the awful (which means awe-inspiring as well as really bad) and the terrifying (which blends terror and the terrific). It could be that an appreciation for landscapes that evoke those sorts of emotions derives from something inherent in our nature. Stephen Kellert in his book *The Value of Life* elaborates on E. O. Wilson's "biophilia hypothesis," our innate—and genetically imprinted—love for other living things, which Wilson sees as the other side of the hereditary coin of certain adaptive aversions, like the fear of snakes. In Africa, home continent of such venomous species as the black mamba, the puff adder, the boomslang, the Gaboon viper, and the Egyptian cobra, ophidiophobia would have provided a clear adaptive advantage for the early *Homo sapiens* who survived long enough to pass on their genes. So, too, suggests Wilson, would a natural affiliation for creatures that could be beneficial to our species. In exploring the concept of biophilia, Kellert identifies nine motives for valuing living things and the natural world in general. Among his categories are the "utilitarian," based on "material exploitation" of nature; the "ecologicistic-scientific," emerging from our

desire for knowledge and understanding; the “naturalistic,” the desire to explore and to satisfy our curiosity; and the “aesthetic,” the search for inspiration and beauty in nature.² The notes of foreboding in the descriptions of the environment in “The Ambitious Guest” exemplify what Kellert terms the “negativistic” valuing of nature, the feeling of “fear, aversion, alienation from nature” (38). The idea is that the negativistic valuing constitutes a recognition of the power of the natural world to affect us, since to fear nature is also to have a healthy respect for its forces.

Even in its reliance on elements of the sublime, then, “The Ambitious Guest” demonstrates (and evokes) responses to environment that can be traced back to adaptive preferences that are a part of our psychic nature as it evolved in our Pleistocene prehistory. These responses are automatic and unconscious precisely because they are evolved responses. As Orians and Heerwagen note, emotions evolved because “the behavior they evoked contributed positively, on average, to survival and reproductive success” (555). To fear a powerful landscape is not only to respect it—but also to be motivated to exercise appropriate care.

Orians and Heerwagen point out that our unconscious responses to landscapes take into consideration the “temporal frame of reference,” including permanent, seasonal, and transitory environmental cues (562). These ideas, too, are apparent in Hawthorne’s story—not consciously planted there, of course, but there because as a literary artist he is sensitive to the ways in which people attend to their environments. The permanent features are those that do not usually change within a human lifetime, and in the story there is the reference to water features (the Flume) and of course the mountains. The latter are the key elements of the landscape’s sublimity, as Hawthorne describes it, and the dangers they pose are readily apparent throughout the story. But of course the narrowness of the Notch is also what leads paying customers to their door. The seasonal references are surprisingly few, but Hawthorne does make a point of specifying in the first line of the story that the events take place on a “September night”—and not in late August, as the actual Willey disaster did (324). The change is a slight one in terms of the calendar, but meaningful in terms of seasonal connotations. With September comes the onset of autumn, which justifies the story taking place mainly around the hearth, focal point of the home and family. And we might recall that Northrop Frye in *Anatomy of Criticism* identifies the fall as the season of tragedy—when we move from the summer story (the romance) of joy and fulfillment to the winter story of disillusionment, loss, bondage, and despair. Right from the start, then, we have seasonal intimations of foreboding.

Transitory cues feature prominently in the story. Orians and Heerwagen note that “these are changes in the environment [that] demand immediate attention and evaluation and a quick response.” These cues can take the form of indications “of prey, predators, or enemies,” or “changes in weather,” or the arrival of a potential mate (562). In “The Ambitious Guest” the wind is worked pretty hard, “rattling the door, with a sound of wailing and lamentation” (324-25) early in the story, and later taking on “a deeper and drearier sound” (331). When the ambitious guest first arrives he says “the Notch is just like the pipe of a great pair of bellows; it has blown a terrible blast in my face all the way from Bartlett” (326). Clearly, in Hawthorne’s account, the wind is trying to tell them something. The message is reiterated by the initial rockfall, a dramatic rendition of the actual earlier slide that the Willey family had survived two months before the final disaster, but which in the story arrives only a few moments before the final disastrous slide. That first rockfall sounds “something like a heavy footstep . . . rushing down the steep side of the mountain, as with long and rapid strides, and taking such a leap in passing the cottage as to strike the opposite precipice” (326). It is not long after this that the youngest child suggests “leaving a warm bed,

and dragging them from a cheerful fire” to drink from the Flume. But “the child’s pertinacious fancy for a night ramble” is pooh-poohed, and the family doesn’t move (330). This appears another instance of romantic confidence in the innate wisdom of a child, à la Wordsworth in “Ode: Intimations of Immortality.” From an evolutionary standpoint, that confidence might be justified as the appropriate response because it is the evolved response, automatic and emotionally-based as it is, to transitory environmental cues—cues which are ignored by the others because of their previous learned experience of the world and their misplaced faith in reason over instinct or emotion.

The final transitory cue is the actual slide, “rising like the roar of a blast . . . broad, deep, and terrible. . . . The house and all within it trembled; the foundations of the earth seemed to be shaken, as if this awful sound were the peal of the last trump ” (332). Hard to miss that transitory cue. And now the family members do spring into action—but their action turns out to be the exact wrong thing to do, seeking “refuge in what they deemed a safer spot,” a shelter they had built for just such an eventuality. And of course the “refuge” is in “the pathway of destruction” and ends up buried “in a cataract of ruin,” while the house itself was untouched (333). The Willey family would have been safe if they had stayed in the house—as the path of the earlier rockfall had suggested—and they would have been safe if they had travelled to the Flume for that drink of water.

Ultimately the story illustrates the consequences of poor habitat selection. Another idea outlined by Orians and Heerwagen, first described by Jay Appleton in *The Experience of Landscape*, is “prospect-refuge theory,” which says that our species’ preferred landscape would offer both prospect, so we can see a long way and scan for potential threats or prey, and refuge, where we can see without being seen. The particular irony pertinent to Hawthorne’s story is that the designated “refuge,” the shelter, does not in fact offer much in the way of refuge. The fatal flaw being presented, the point of the cautionary tale, is that we should be careful about where we choose to settle and attentive to transitory environmental cues. Perhaps too the story comments on the trickster nature of nature. It is beyond our control, and constantly capable of surprising us—the ultimate round character, with a circumference of about 24 thousand miles.

Traditional readings of Hawthorne’s story have focused on the ways in which it has fit with the aesthetic agenda of Hawthorne’s time and place—mainly as an expression of literary nationalism—or have emphasized how the thematic caution against the excesses of ambition fits Hawthorne’s ongoing concern with what he saw as the “unpardonable sin,” the tendency to isolate oneself from others. A reading of Hawthorne’s story using ideas from the study of evolution as it pertains to environmental aesthetics supplements rather than supplants these sorts of culturally oriented readings of the story. But an evocritical approach is a useful way to highlight how this, or any other successful story for that matter, manages to contain appeals to human nature as well as to the concerns of a particular culture.³ And in a story in which the landscape plays such a significant role as determinant of plot and theme, applying ideas from environmental aesthetics seems an appropriate way to give the landscape its due.

The foregrounding of the natural environment is even more evident, as we might expect, in a landscape painting like Cole’s *Notch of the White Mountains*. Typically Cole’s work is viewed, like other Hudson River School art and much of the literary expression of his day, as an expression of nationalistic purpose and pride. Like Hawthorne’s “Ambitious Guest,” Cole’s painting was an attempt to story the American landscape with legends and history that would lend depth to our sense of place. You see a recognizable landmark like Crawford Notch and you think of the story and the painting that are set there, and the

history that took place there.⁴ Both works, then, can be seen as part of the response to Emerson's call in "The American Scholar" for a distinctly and recognizably American art form: "our day of dependence, our long apprenticeship to the learning of other lands, draws to a close," he says, echoing a theme that was very much in the cultural air (and in popular magazines) at the time (52). The pursuit of this nationalist aesthetic, as shared by artists and writers, is the subject of Asher Durand's *Kindred Spirits*, another classic work of the Hudson River School that depicts Cole and poet William Cullen Bryant sharing a view of the Catskills.

But again, our appreciation for Cole's *Notch of the White Mountains* is enhanced when we perceive not just its cultural dimension but its appeal to our innate principles of environmental aesthetics as they were shaped in our evolutionary past. Perhaps because a painting can provide more complete visual information, Cole offers even more environmental cues in what Orians and Heerwagen call the temporal frame of reference. Transitory cues include the active clouds, with the blue sky in the upper right giving way to stormy clouds approaching from upper left; in fact, it looks like the dark clouds might already be producing rain based on the way dark wisps streak below the mass of the cloud. These sorts of "sudden changes in the characteristics of a stimulus are likely to be associated with potential hazards or opportunities," say Orians and Heerwagen, and of course those changes suggest to an attentive observer the need to find cover (566). Approaching the center of a clearing, just below the Notch that forms the painting's centerpiece, a rider is seated on a horse that seems to be prancing or rearing—either way, there's dynamic movement, suggesting urgency about something, perhaps a desire to deliver a warning to the residents of the house tucked under the mountain to the left, or simply to reach the refuge of the house before the storm hits. Orians and Heerwagen suggest that the presence of mammals, such as the horse (or the rider, for that matter), is another "source of transitory information." Even though the horse is neither "a potential source of food" or "a source of danger," we are intuitively attuned to the movement of mammals and "find their behavior intrinsically interesting" (567). Again, think "biophilia," E. O. Wilson's term for our innate desire to affiliate with other living things.

Seasonal cues are also very apparent in the painting. If the scene is meant to stand in as a depiction of the Willey house just before the disaster arrives, Cole, like Hawthorne, seems to advance the season a bit, placing it in early autumn rather than late August. A few of the deciduous trees have turned orange, and the dominant hue in the forested landscape is gold. This might be an attempt to invoke the tragic note of the fall, or perhaps it is part of the nationalist agenda to celebrate a recognizably American landscape, already becoming renowned for the autumn colors of New England. Orians and Heerwagen suggest that it would be adaptive to respond to signals of seasonal change evident in such "vegetative transformations of plants" as we see in autumnal foliage, but they also point out that "from an evolutionary perspective . . . we would expect the signals to be emotionally asymmetrical." We are likely to respond more favorably to "cues associated with productivity and harvest (greenness, budding trees, fruiting bushes)" than to "cues associated with the dormant season (bare-limbed trees, brown grass)" (569). In Cole's painting we have a combination of both sets of cues, with hints of lushness and fertility along with hints of approaching autumn—and we know what comes after those autumnal hints, especially within a few miles of Mt. Washington, site of, as the motto goes, "the worst weather in the world." Suggesting lushness are the still-green forested slopes of the mountain on the right side of the painting, and in the foreground are low-lying bushes turning red. Those bushes are distant enough from the viewer's perspective to be somewhat indistinct, and on my first encounters with the painting (in the National Gallery in Washington, D.C.) I assumed they were flowers in bloom. Orians and Heerwagen point out that for "an organism that rarely eats flowers," we sure seem to place "high value on them"

and are especially attentive to them since they are “signals of improving resources” (569). Later, of course, I realized that given the other seasonal cues in the painting, those splashes of red couldn’t be flowers in bloom. Now my guess is that the reddish hue of the brush might be the turning leaves of huckleberries, and while the berries would be gone for the year, those bright colors call attention to the bushes and the promise of good foraging in the future. But along with these positive cues, the landscape is also full of hints of the coming season of dormancy. We see a couple of “blasted trees,” an American version of the much prized ruins of European landscapes. We didn’t have the fallen stones of castle walls to indicate the poignancy of passing time, but we did have forests in decay. Perhaps these might also be regarded as indicators of resource availability—those snags would provide firewood. That suggestion of resource availability is furthered by the fresh-cut stump dominating the center foreground and the smaller stumps dotting the clearing, suggesting the possibilities for logging. But on an instinctive level, these dead trees might reinforce the early warning signs of approaching autumn.

Permanent features in the painted landscape include the mountains, the notch, the forest, and the boulder outcrops on the slope above the house (outcrops which presumably, if this were the actual scene of the Willey disaster, might be responsible for diverting the landslide around the house below). It’s an environment rich in timber resources, and at the same time the clearing in the foreground has some of the appeal of savanna, offering a good view. Perhaps the most appealing permanent environmental cues are the implied presence of other people. The house and the path offer, as Orians and Heerwagen put it, “evidence of the presence of conspecifics”—and these “signs of human occupancy suggest that other people have evaluated and selected this habitat and have survived in it” (570). The path also suggests that there is an easy way to move through the environment. If you look closely, the presence of conspecifics is also evident in more overt ways, in some more transitory cues. You can barely see an adult and child in front of the house, apparently coming out to greet the rider, and further back a small stagecoach, presumably following the road beyond the house en route to the Notch.

In addition to describing the time frames of decisions regarding landscape preference, Orians and Heerwagen also describe a spatial frame of reference that incorporates three stages of exploration of a landscape. The first stage is the initial encounter, when we decide whether or not to explore further. This stage calls for rapid, unconscious responses based on the presence of what Robert Zajonc calls certain “preferenda,” general features like “spatial configurations, gross depth cues, and certain classes of content, such as water or trees.” “Spatial configurations” refers to “the degree of openness of an environment,” which can suggest “information regarding the ability of the space to meet human needs.” Landscapes “devoid of protective cover” or, conversely, so closed-in as to restrict “movement and visual access” would both be considered undesirable, but in the case of Cole’s painting, the degree of openness passes the Goldilocks test: it’s just right, neither too open nor too restricted. The center foreground is an open meadow, with the house tucked in along one edge, surrounded by mountains, and the Notch itself is featured prominently just below the center of the canvas. “Gross depth cues” refer to our ability to gauge distance and “the time required to cross open spaces.” In Cole’s painting, several features clearly demarcate the relative distances—the house, a small barn or shed, clouds drifting low in front of Mt. Webster in the center background, the Notch in front of it. The road leading to the house and presumably to the Notch beyond promises “ease of movement” within this environment (563-64). The presence of water and trees suggests the “availability of basic resources,” and in Cole’s painting there is a pond in the left foreground (source of the Saco River) as well as the snags and stumps, reminders of the abundance of timber resources in the area. Of course, read another

way, those stumps might indicate too much human presence, as evidence, in Orians and Heerwagen's words, of "crowding or depleted resources" (570). Rebecca Bedell sees them as evidence of "the ravages that the axe was daily inflicting on American nature," suggesting that Cole thereby "draws a connection between the violence man has wrought on nature and the violence nature has visited on man," the latter a reference of course to the Willey Disaster (45).

The next stage in the spatial frame of reference described by Orians and Heerwagen is "information gathering," where the individual decides to explore further. That decision is based on "inducements to exploration" (564). In Cole's painting we are enticed by a number of elements in the scene. The house is far enough away to appear small, and it's partially hidden by trees and brush. But there is smoke coming from the chimney—looks like someone is home. Might we find welcome there? And who is that coming out to greet the rider? Behind the Notch, of course, it looks like there might be a whole other valley, and we might be able to see the valley from the boulders perched on the slope above the house. Orians and Heerwagen identify "repeated or 'rhyming' patterns" as enticements to exploration, and those patterns are evident in the repeated lines throughout the painting, as the boulders on the slope above the house echo the outlines of the mountain in the background, lines also picked up by the dead snags in the foreground. Even the underside of the dark mass of cloud in the upper left echoes the slope of the distant mountain. Colors, too, echo, as the vibrant beige of the background mountain is picked up by the shed in the middle of the plain and the exposed wood of the cut stump in the center foreground. These sorts of repeated patterns suggest that the landscape is tied together in some way as to make it comprehensible.

This second stage of exploration also involves risk assessment, so that the viewer (and potential explorer) must be "ready to respond to sudden stimuli and unexpected danger" (Orians and Heerwagen 564). Those stimuli, often involving more transitory environmental cues, could come in the form of "sudden or intense changes in sound or light levels," and in the case of Cole's painting there are the dramatic light effects (typical of Hudson River School art) that suffuse the canvas, especially the gold splashing the sunlit meadow and the background mountain. At the same time there is the dark approaching storm, and together these light effects create tension between appeal and the need for caution. Either way, of course, our senses are heightened. While this is a painting, so of course no sound effects are overt (you may have figured that part out for yourself), there is the drama of the horse and rider. If the raised front legs of the horse are in mid-canter, we would expect to hear the sounds of hoofbeats. If the horse is rearing because of something immediately ahead in the path, then we might almost hear its surprised squeal or the rider's "whoa!" Either way, the implied sound effects make us attend to the action. In considering risks, we might also note that the clearing is exposed but that there is concealment available along the edges.

Orians and Heerwagen note that the final stage of the spatial frame of reference gets to the nub of habitat selection: the decision to stay in the environment. Here we'd be looking for "a mixture of patches that provides opportunities," and those patches must be close enough together to be accessible within a reasonable time frame (565). The landscape of Cole's painting appears rich in this regard. There is the cleared meadow that might be tillable, and until then provides foraging opportunities (the huckleberries?). There is firewood in the dead snags, timber in the trees covering the mountain slopes, and the pond in the foreground making clear the availability of water. But there are unsettling hints as well, primarily in the way the mountains so overwhelm and overshadow the signs of human presence. The mountains and those storm clouds are so big, the house and the barn and the stagecoach and the

rider so small. Are those high mountain walls offering shelter or imprisonment? And should something happen, escape routes seem limited to the path leading from the plain to the house and then through the narrow Notch.

The temporal and spatial frames of reference described by Orians and Heerwagen are not the only ways of trying to understand the subconscious processes of environmental preference and habitat selection. To further understand those processes, I turn now to the “preference model” described by Stephen Kaplan. Essentially Kaplan says that we prefer landscapes that appeal to our desire for both understanding (which would lead us to stick with familiar environments) and exploration (which would lead us to explore new environments and to try to find new routes through a familiar landscape). The preferences can be summarized in four qualities of landscapes that appeal to us: coherence, legibility, complexity, and mystery. Like Orians and Heerwagen, Kaplan claims that these preferences derive from usefully adaptive responses inherited from our ancestors—because genes that promoted certain behaviors enhanced the survival opportunities for those individuals who carried those genes. The qualities defined by Kaplan fit comfortably in the schemes described by Orians and Heerwagen, identifying more precisely what it is that leads us to explore environments further and to choose them for settlement.

Coherence, says Kaplan, “refers to the ease with which one can grasp the organization of the scene.” An environment high in coherence would have “a modest number of distinctive regions that are relatively uniform within themselves and clearly different from each other” (588). A sense of coherence is aided by repeated elements and groupings or clusters. In Cole’s painting the “distinctive regions” are the clearing in the foreground and center, ending at the Notch itself, the three mountains (one to either side and one in the background), and the sky in the top portion, with half the sky clear and half threatening. Repeated elements that tie the scene together are evident in the echoing lines of the painting discussed above, the echoing colors, the house and barn, the field of stumps in the meadow, and the two boulders on the slope above the house. The mountains to each side almost look like mirror images, both dropping down to the Notch in similar slopes, except one is dominated by green hues and the other by golds and oranges. All the dead snags are clustered in the foreground, and all the conifers are clustered in two spots, one in the left foreground on the lower slopes of one mountain and one just to the right of the Notch on the lower knob of the mountain on the right.

Coherence is one of the qualities of a landscape that Kaplan says we perceive immediately, and it appeals to our desire for understanding. The other immediately perceived quality, the one that appeals to our desire for exploration, is complexity, which refers to “the richness of the number of different objects in the scene” (588). In the case of Cole’s *Notch*, there is a wealth of different objects—the snapped trunk of a foreground tree, the rest of the downed tree lying in the grass, the grain in the bark of a blasted tree to the right, the smooth cut on a fresh stump, the smaller and more distant stumps, the brush, the pines in the left foreground, the glint of sun on some of the standing snags, the glorious golds in the background mountain. There are the horse, the rider, the barn, the house, and the forests on the mountain slopes, depicted in such detail that we can identify the crowns of deciduous and coniferous trees even at a distance. The painting is rich in complexity, but the arrangement into recognizable sections and the use of clustering and of repeating elements—in other words, the characteristics that maintain coherence—keep the complexity from becoming overwhelming.

Kaplan says that some characteristics of a scene are not apparent immediately but require time to draw inferences. The first of these, another one appealing to our desire for understanding, is legibility, “an assessment of how well one could find one’s way within the depicted scene” (588). For a landscape to be legible it must be open enough to provide visual access, as Cole’s view of the Notch clearly is, with the meadow in front of the house featured in the center foreground, and with distinctive landmarks to guide the wayfarer, like the Notch, the boulders on the slope, the blasted trees, the mountains, and of course the path, for example. There are also borders at the edge of the meadow that leads to the Notch—and that presumably could guide one back.

The final element in environmental preference, another inferred element but this one providing an incentive to exploration into the unknown part of a landscape, is mystery, “the promise of more information if one can venture deeper into the scene” (588). In Cole’s painting there is the promise of a whole valley beyond the Notch, and the way in which the trees and foliage around the house partially obscure it. Kaplan also says that signals of mystery include such items as “a bending path” or “a brightly lit area partially obscured by light foliage” (594). Both are evident in the clearing in Cole’s painting. A final sign of mystery in a landscape is “visually impenetrable foliage, but with a hint of a gap where one could pass through,” as we see exemplified in the forested mountain slopes and of course the Notch itself, front and center in Cole’s painting. In his studies of environmental preference, Kaplan found that mystery was the strongest predictor of preference and that people made their judgments “rapidly and easily,” which suggests an intuitive basis for those preferences (590). His purpose, then, in generating his preference model, is “to inform intuition,” to identify just what underlies our intuitive preferences for certain environments (589).

Kaplan also further explores Appleton’s prospect-refuge theory, citing a dissertation by R. Woodcock, who tested preferences in terms of both primary and secondary prospects, and primary and secondary refuges. A primary prospect would be a spot with a good view, and a secondary prospect would be a view of a hill or other elevated viewpoint from which we would expect to have a good view. To put it another way, a primary prospect would be a view *from* a high place, and a secondary prospect would be a view *of* a high place. A primary refuge is a view *from* cover, and a secondary refuge would be a view *of* a place that might offer cover. Woodcock found that primary prospect is consistently a good predictor of preference, but a scene without a good primary prospect could be preferred if the scene was high in legibility. Counter to expectations, Woodcock’s studies found primary refuge, such as a view from the woods looking outward to a clearing, to be a negative predictor. Kaplan suggests that such a position might be perceived as a hindrance to locomotion or vision. Woodcock also tested the opposite effect, the “agoraphobia” variable, to test comfort levels with exposure in open areas without protective cover, and this too led to negative preferences (Kaplan 592).

Applying all this to Cole’s *Notch of the White Mountains*, we can note that the viewer’s perspective is only slightly elevated, if at all, but it certainly does have an excellent view of the meadow and the surrounding mountains. The view is framed, in accordance with picturesque aesthetics, by the blasted trees, so there is the suggestion of refuge, but the viewer certainly has no sense of being closed in, and of course, the scene is high in legibility as well as mystery, coherence, and complexity. The rider is in the open clearing, an exposed position that commands the viewer’s attention. Secondary prospects are evident in the boulders on the slope above the house, which might afford a view beyond the Notch into the next valley. The house itself promises secondary refuge, in a tucked-away position under the mountain and facing the meadow.

What is clear about all this is that the landscapes of paintings like Cole's *Notch of the Mountains*, or stories like Hawthorne's "The Ambitious Guest," appeal to us not just because they can be interpreted in light of cultural themes but also because artists and writers know how to incorporate elements of environmental aesthetics that earn the attention of any member of our species. (I know that when I first saw Cole's painting, before I was aware of its background in the nationalist aesthetic agendas of the Hudson River School or American romanticism, I was completely wowed.) The appeals to an evolved and largely unconscious set of criteria for territorial evaluation might account for the fame of both works—fame that transcends even the historical and cultural moment, the Willey Disaster, that is the overt subject in Hawthorne's story and an implied subject in Cole's painting. Ideally, of course, a sensitive and informed reader or critic should consider both the cultural and the biological appeals. At present, literary critics have generally been remiss about taking into account evolutionary explanations for human behavior as it has been expressed in literature, instead putting all its emphasis on literature as an artifact of culture and a reflection only of culture. At the same time, so too have the (admittedly outnumbered) proponents of evolutionary literary criticism (also variously known as "evocriticism," "literary Darwinism," "bioaesthetics," or "biopoetics") been willfully blind to the role of culture in the workings of literature, from both the production and the consumption end (in other words, the perspectives of both the writer and the reader). That bias has led in turn to evocritics' impatience with (or for some, condemnation of) the social constructivist bent of post-structuralist literary theory, which Brian Boyd contends has made English departments "the laughingstock of the academic world because of their obscurantist dogmatism and preening pseudo-radicalism" (19).

Of the two works I've examined here, I confess that I find Cole's painting the more remarkable and powerful. While Hawthorne's story (among its other themes) serves as an instructive negative example about the need to carefully evaluate environmental cues (by showing us what happens when you don't choose carefully), it is heavy-handed in the emphasis on the elements of danger. So too, for that matter, is Cole's original 1828 painting of the Disaster, *Distant View of the Slides That Destroyed the Willey Family*. While it too is rich in dramatic light effects, rhyming patterns, complexity, and mystery, the road is blocked with debris and the storm clouds seem more prominent than the patches of sunlight. Risk assessment is aided by the gashes in the slopes of Mt. Willey where the slides came down, but ultimately the depicted scene seems, in Kaplan's terms, to lack legibility. There's also not much of an extended prospect or cozy refuge. And Cole tellingly chose to omit any sign of human presence other than the debris-strewn road, one more indication that this is not a hospitable landscape. All in all, it adds up to what Purchase calls "Cole's starkest image of nature" (72). *The Notch of the White Mountains* presents more interesting tensions. While we may be aware of and attentive to some of the negative environmental cues, signs of impending danger like the approaching thundercloud, the dramatic light effects and differences in light intensity in portions of the painting, and the rearing horse in the exposed clearing, we also have plenty of reasons to be enticed into the landscape. It meets all the criteria for an environment worth exploring further. Cole's painting makes us want to enter that landscape, and we can see plenty of reasons to select it as home habitat—which puts us in exactly the ultimately vulnerable position of the Willey family. Enticed into *The Notch of the White Mountains* just as the Willey family had been before the disaster hit, we might realize that we too would have been crushed by the landslide, so the cosmic irony really hits home. An awareness of the evolutionary basis for our environmental preferences, then, can not only explain the appeal of a landscape depiction (whether on canvas or on the page), it can also heighten our sense of the artistry of the portrayal.

Endnotes

- ¹ On the need for ecocritics to ground their work in evolutionary theory, see also Glen Love's recent "Ecocriticism, Theory, and Darwin." For a useful and readable introduction to evolutionary literary criticism, I recommend David and Nanelle Barash's *Madame Bovary's Ovaries*.
- ² The other categories established by Kellert are the "dominionistic," or the drive for dominance; the "humanistic," based on our need for "bonding, sharing, cooperation, and companionship"; and the "moralistic," or an ethical concern for nature based on a search for order and meaning. For an exploration of how Kellert's categories fit the characters in another Hawthorne story, "The Great Carbuncle," see Ian Marshall, "Democracy and Ecology: Hawthorne's White Mountain Stories" in *Story Line* (203-25).
- ³ Other evocritical readings not focused on the environment are of course also possible. Evolution focuses on adaptations that aid in survival and/or reproduction, and in truth the interest in survival is a subset of reproduction, since the gene's interest in the individual organism's survival is so that it can live long enough to pass on copies of itself to offspring. Thus we can see why literature so often focuses on the mating game, and "The Ambitious Guest" is no exception. Throughout the story we see evidence of a developing flirtation between the ambitious guest and the eldest daughter; Hawthorne says that "Perhaps a germ of love was springing in their hearts" (331). We also see focus on the kin group in the three generations of the family, with the possibility of a fourth generation if the romance were to flower. Of course the guest's ambition is potentially in conflict with his role as a possible mate in the daughter's eyes—he wants to make his way in the world, which means he won't be staying put as a reliable father should. That does not necessarily diminish his attractiveness in the daughter's eyes, however, since, as Daniel J. Kruger et al point out, "cads" as well as "dad" types have their appeal.
- ⁴ Since the setting of *Notch of the White Mountains* is a few miles to the north of the actual site of the Willey house, and on the other side of the Gate of the Notch, perhaps it is worth explaining the tendency of art historians and critics to read the painting as a depiction of the 1826 disaster. Some may simply assume that any painting of the Notch must be invoking its most famous historical and (after Hawthorne) legendary incident. Nancy de Flon, for instance, says that Cole "appears to have reconstructed the scene as it looked in the hours just prior to the disaster. The house is standing, and smoke curls from its chimney. A man and child have emerged to greet a man who approaches on horseback. At first glance, this is a scene of domestic rural tranquility—but one with a sense of foreboding" (108). Of course, the house is actually Thomas Crawford's inn, where Cole stayed in 1839, not the actual Willey house, but my point is not to highlight the error; rather, such commentators are surely picking up on exactly the cues suggested by the painting's title, so that the Crawford inn functions as sort of a stand-in for the Willey house. The implication is that what we see in the painting must have been what the scene looked like on the day of the disaster. Rebecca Bedell has it right, I think in claiming that the painting "may be a topographic view of Crawford Notch as it appeared to Cole on his 1839 visit; on the other hand, it might be read in a different way," as "a narrative picture, a reconstruction of the site in the hours before the Willey Disaster" (43). Bedell notes that the storm clouds and dead trees add "intimations of the approaching tragedy," and she suggests that the approaching rider may in fact be a rendering of Hawthorne's ambitious guest, since "Cole avidly sought out literary associations with the sites he painted" (44).

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